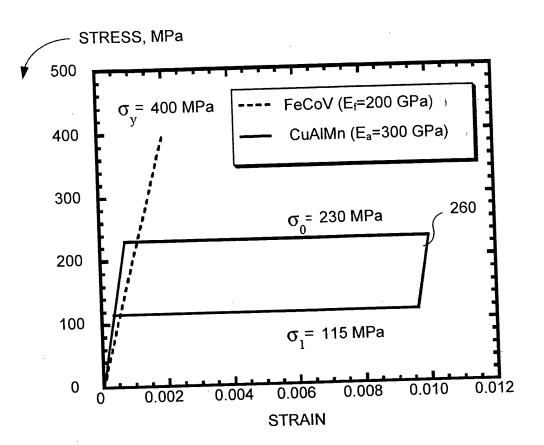
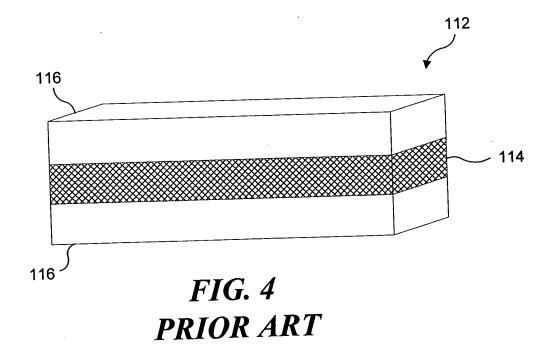


PRIOR ART

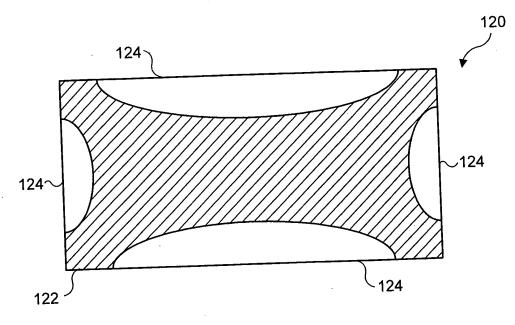


**FIG.** 3



DESIGN OF FERROMAGNETIC SHAPE MEMORY ALLOY COMPOSITES AND ACTUATORS INCORPORATING SUCH MATERIALS

Applicants: Minoru Taya et al. Attorney Docket No: UNIV0216



*FIG.* 5

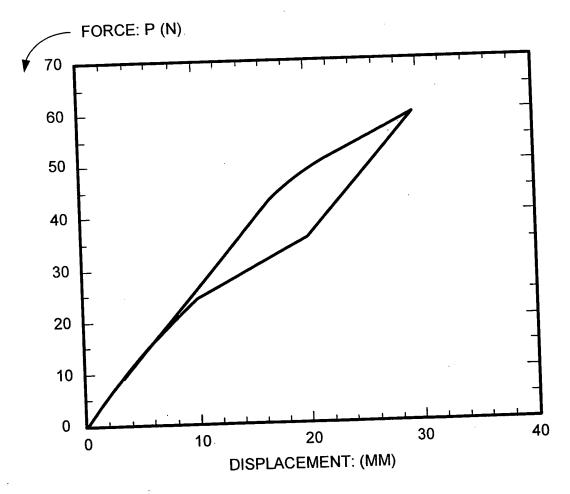
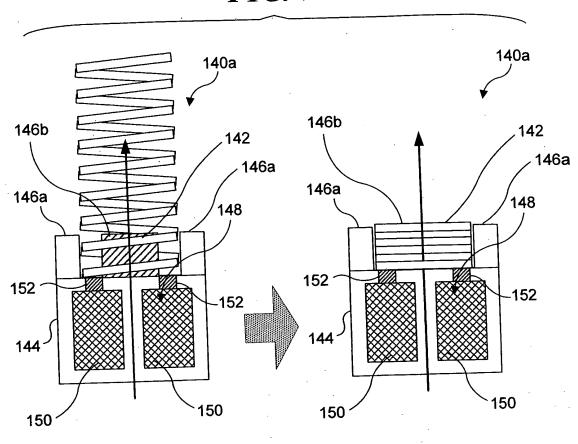
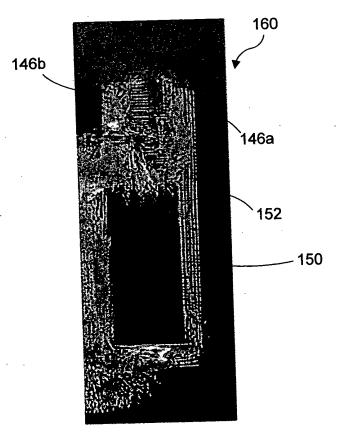


FIG. 6





**FIG.** 8

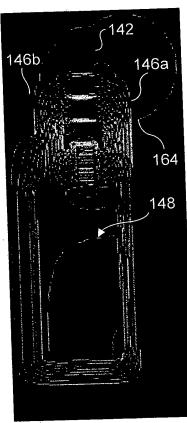


FIG. 9A

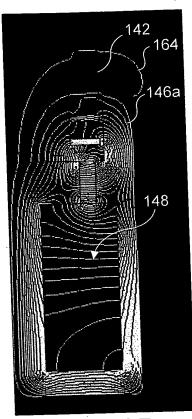


FIG. 9B

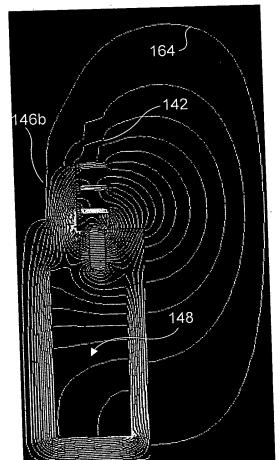
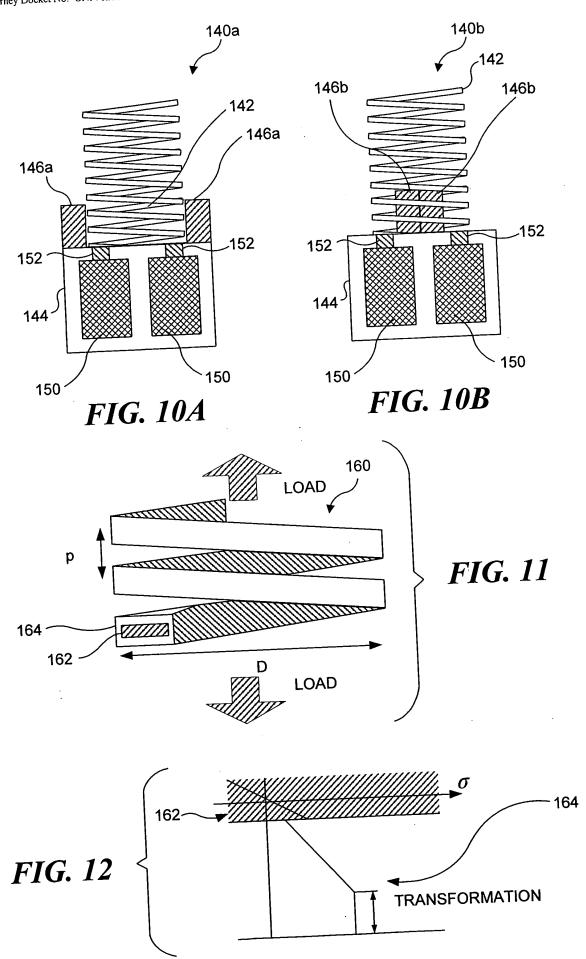


FIG. 9C

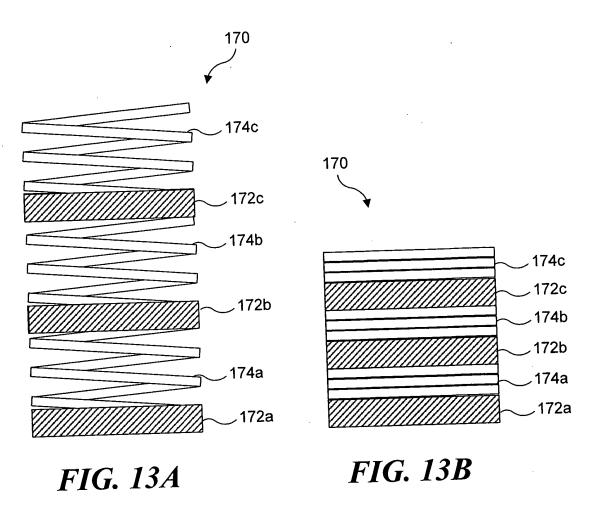
Title:

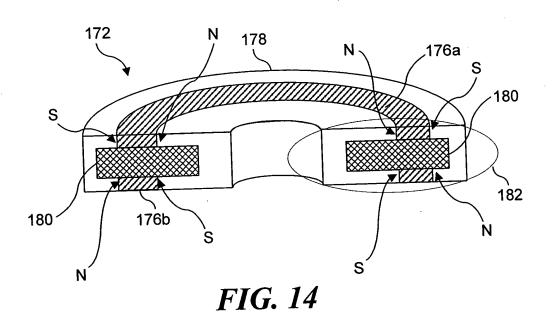
DESIGN OF FERROMAGNETIC SHAPE MEMORY ALLOY COMPOSITES AND ACTUATORS INCORPORATING SUCH MATERIALS



DESIGN OF FERROMAGNETIC SHAPE MEMORY ALLOY COMPOSITES AND ACTUATORS INCORPORATING SUCH MATERIALS Title:

Applicants: Minoru Taya et al. Attorney Docket No: UNIV0216





BX P1U-948 (DKAF ISPEKSUN'S REVIEW DATED 06/16/05

Applicants: Minoru Taya et al. Attorney Docket No: UNIV0216 DESIGN OF FERROMAGNETIC SHAPE MEMORY ALLOY COMPOSITES AND ACTUATORS INCORPORATING SUCH MATERIALS

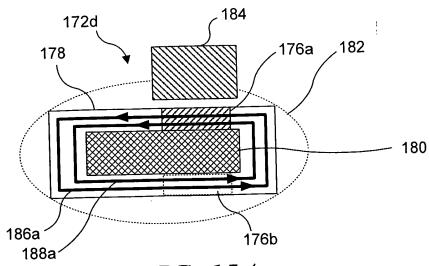
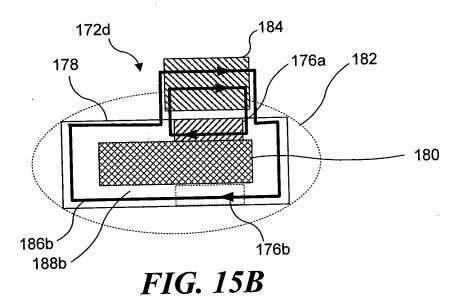


FIG. 15A



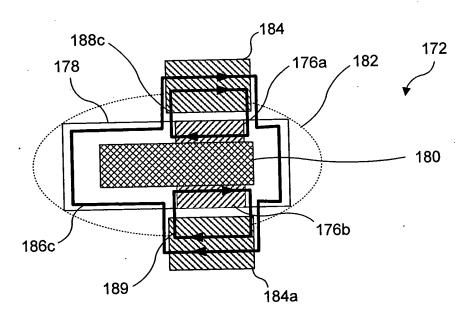
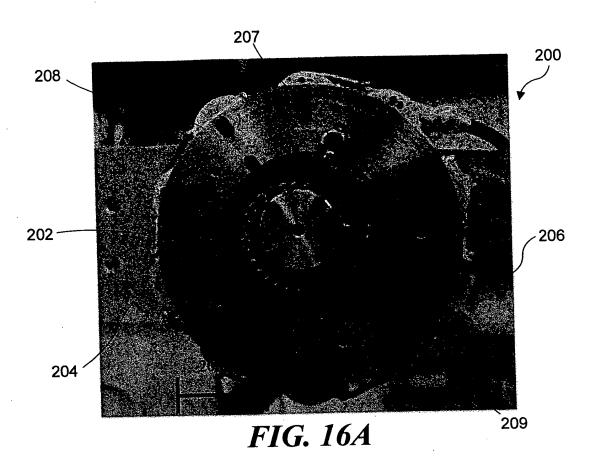
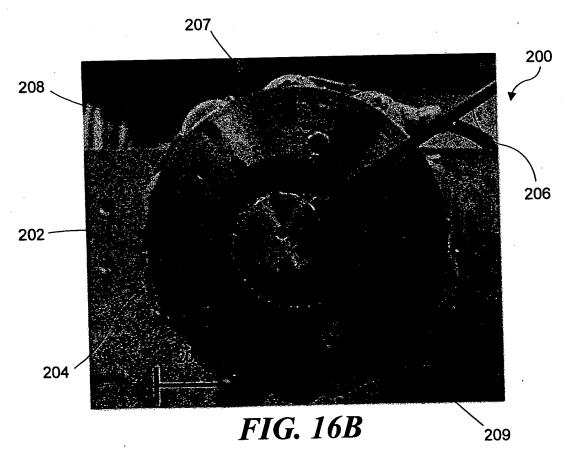


FIG. 15C





BY PIU-948 (DKAPISPEKSUN'S KEVIEW DAIED 06/16/05

Applicants: Minoru Taya et al.
Attorney Docket No: UNIV0216

Title:

DESIGN OF FERROMAGNETIC SHAPE MEMORY ALLOY COMPOSITES AND ACTUATORS INCORPORATING SUCH MATERIALS

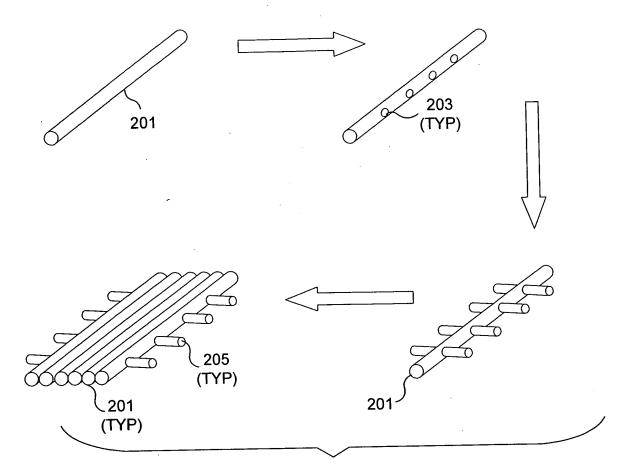
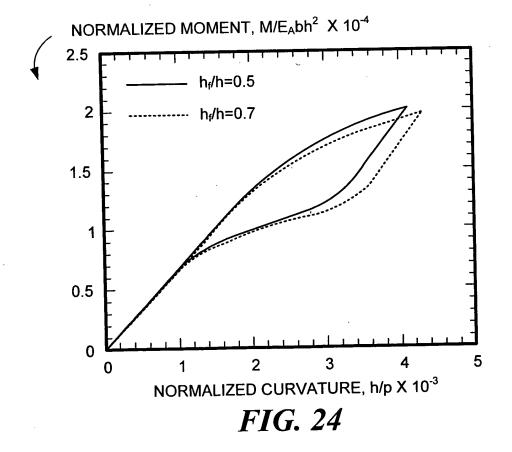
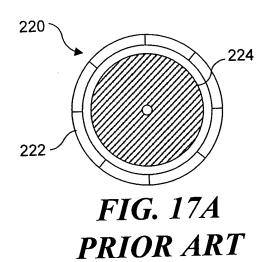


FIG. 16C





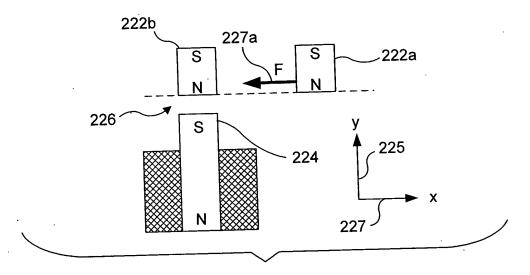
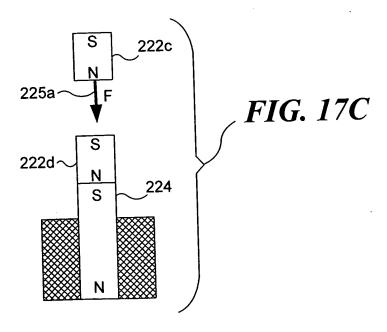


FIG. 17B PRIOR ART



Title:

DESIGN OF FERROMAGNETIC SHAPE MEMORY ALLOY COMPOSITES AND ACTUATORS INCORPORATING SUCH MATERIALS

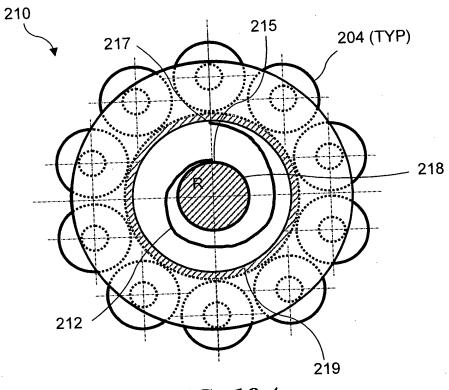


FIG. 18A

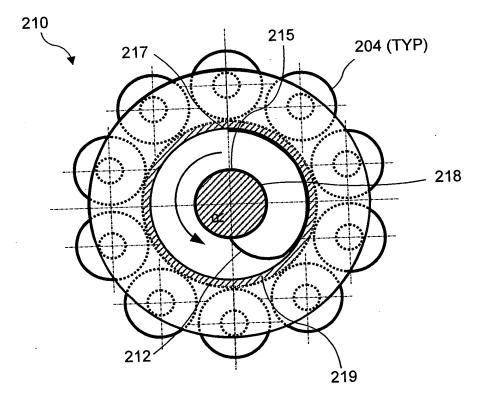


FIG. 18B

DESIGN OF FERROMAGNETIC SHAPE MEMORY ALLOY COMPOSITES AND ACTUATORS INCORPORATING SUCH MATERIALS

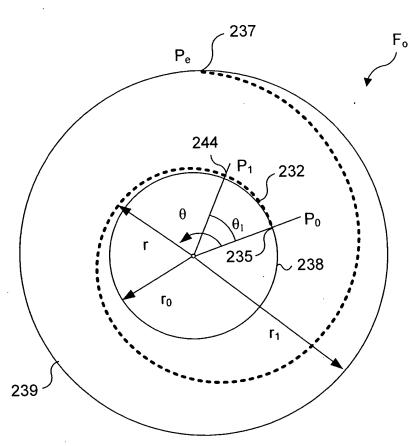


FIG. 19A

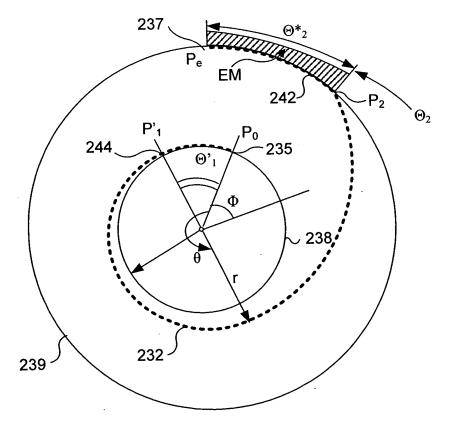


FIG. 19B

DESIGN OF FERROMAGNETIC SHAPE MEMORY ALLOY COMPOSITES Applicants: Minoru Taya et al. AND ACTUATORS INCORPORATING SUCH MATERIALS Attorney Docket No: UNIV0216

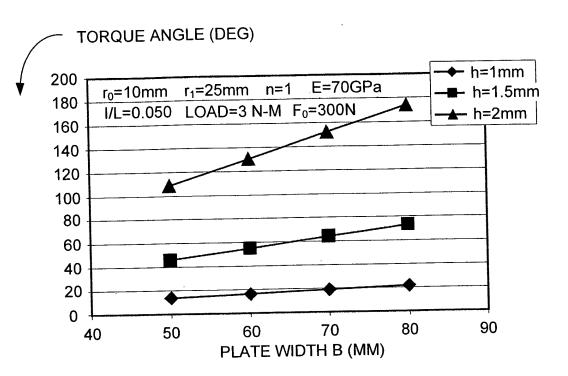


FIG. 20

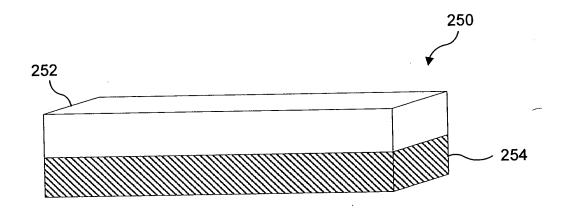
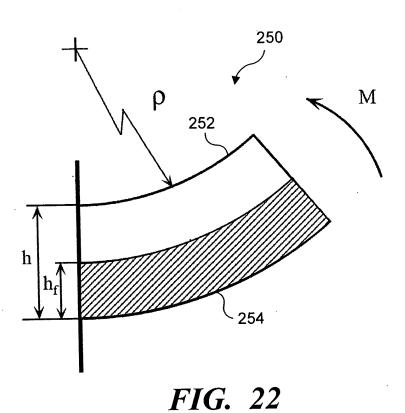


FIG. 21

DESIGN OF FERROMAGNETIC SHAPE MEMORY ALLOY COMPOSITES AND ACTUATORS INCORPORATING SUCH MATERIALS



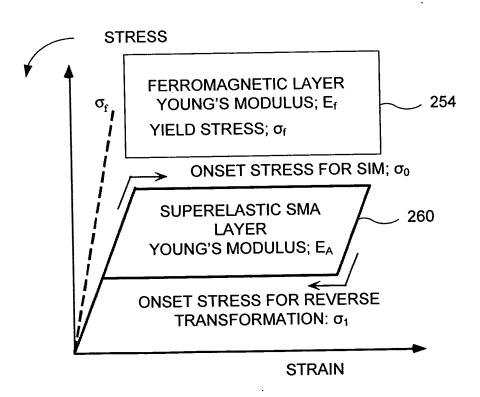
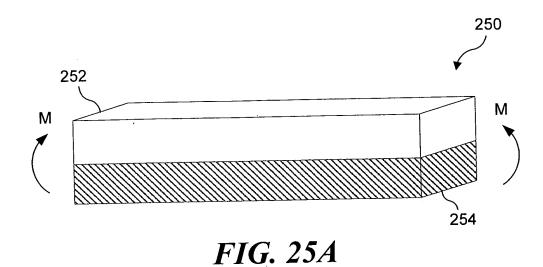
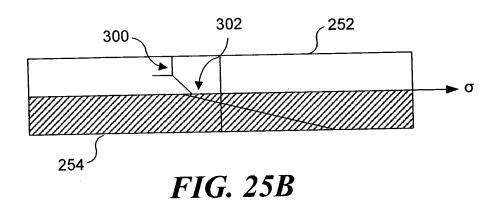


FIG. 23

#### BY PTO-948 (DKAF ISPERSON'S REVIEW DATED 06/16/05

DESIGN OF FERROMAGNETIC SHAPE MEMORY ALLOY COMPOSITES
AND ACTUATORS INCORPORATING SUCH MATERIALS





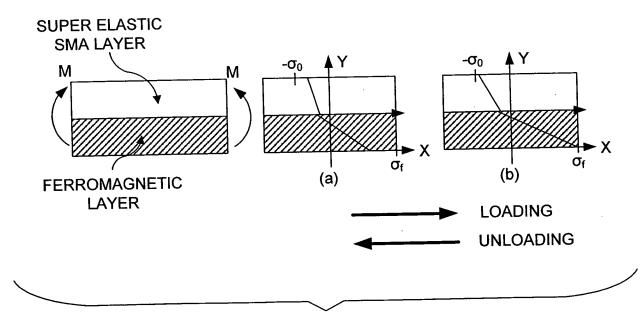


FIG. 26A

SCHALINO. 10/170,034 Applicants: Minoru Taya et al. Attorney Docket No: UNIV0216

Title:

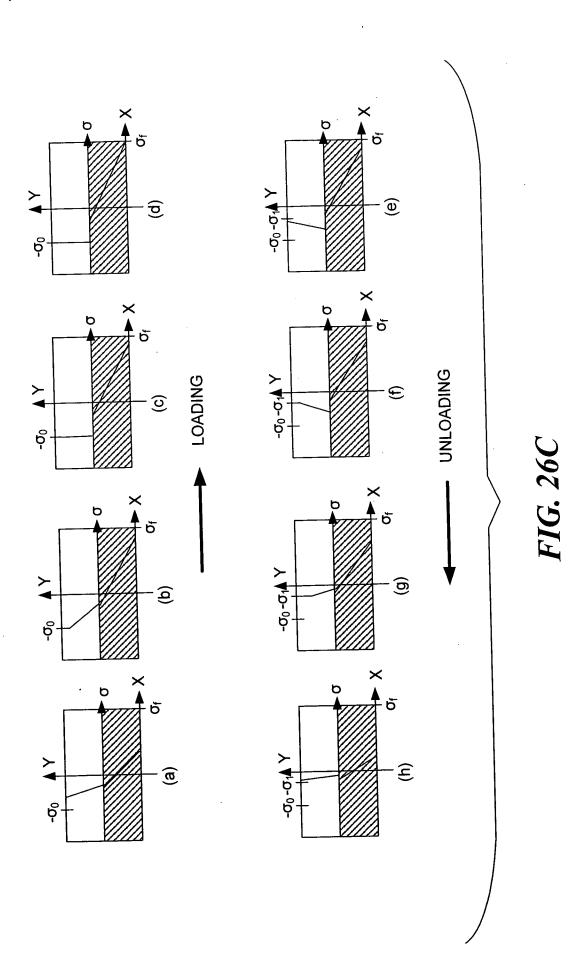
DESIGN OF FERROMAGNETIC SHAPE MEMORY ALLOY COMPOSITES AND ACTUATORS INCORPORATING SUCH MATERIALS

ਉ <u>ပ</u> UNLOADING LOADING **≻** <u>a</u> ģ ≥ FERROMAGNETIC LAYER SUPER ELASTIC SMA LAYER **(b**) Σ

FIG. 26B

Title:

BY PTO-948 (DRAFTSPERSON'S REVIEW DATED 06/16/05)
DESIGN OF FERROMAGNETIC SHAPE MEMORY ALLOY COMPOSITES
AND ACTUATORS INCORPORATING SUCH MATERIALS



BY PIU-948 (UKAFISPEKSUN S KEVIEW DAIED UO/10/US

Applicants: Minoru Taya et al.

Attorney Docket No: UNIV0216

Attorney Docket No: UNIV0216

DESIGN OF FERROMAGNETIC SHAPE MEMORY ALLOY COMPOS AND ACTUATORS INCORPORATING SUCH MATERIALS

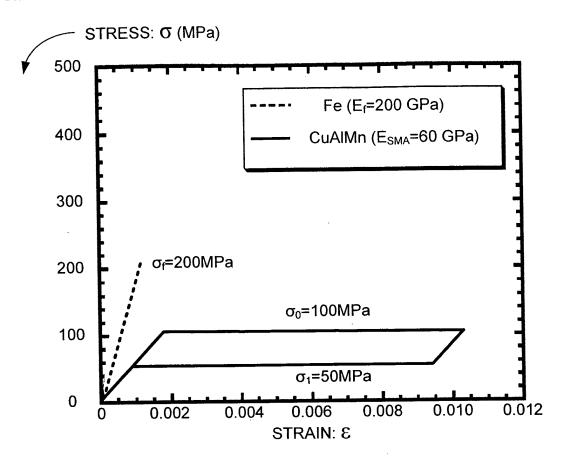
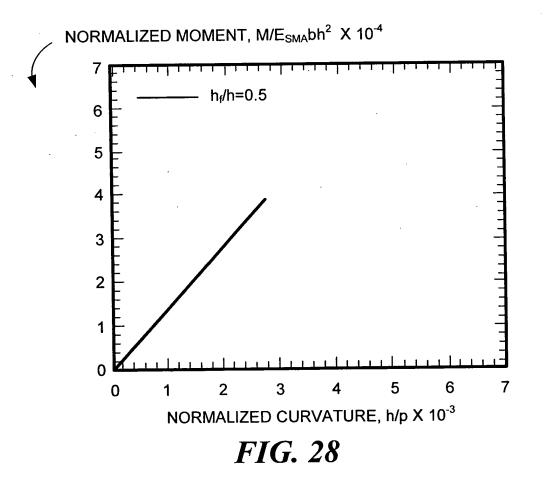


FIG. 27



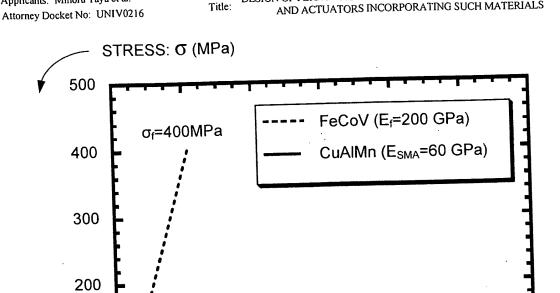
Applicants: Minoru Taya et al.

100

0

BY PTO-948 (DRAFTSPERSON'S REVIEW DATED 06/16/0

DESIGN OF FERROMAGNETIC SHAPE MEMORY ALLOY COMPOSITES AND ACTUATORS INCORPORATING SUCH MATERIALS



0.004

0.002

FIG. 29

0.006

STRAIN: &

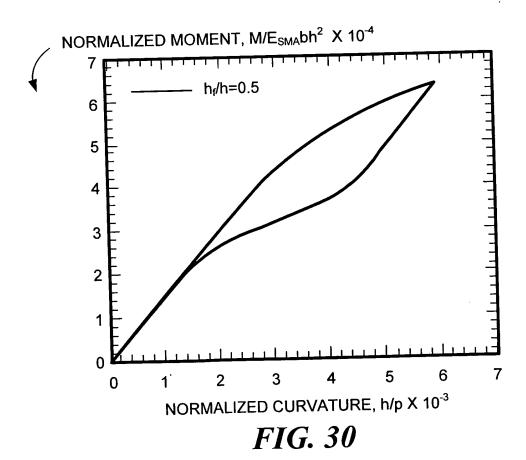
 $\sigma_0$ =100MPa

 $\sigma_1$ =50MPa

0.008

0.012

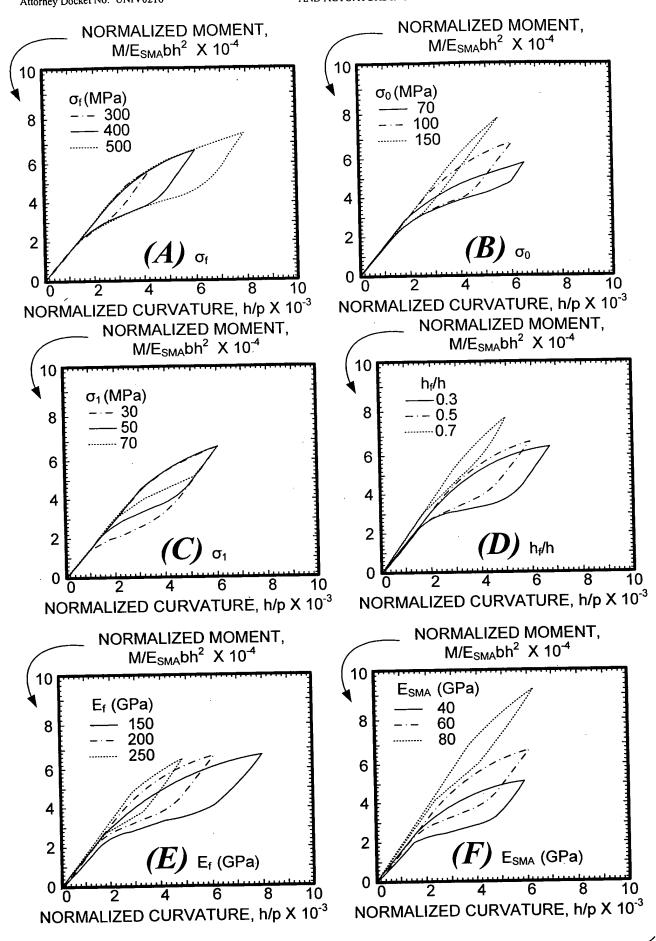
0.010



Applicants: Minoru Taya et al.
Attorney Docket No: UNIV0216

Attorney Docket No: UNIV0216

AND ACTUATORS INCORPORATING SUCH MATERIALS

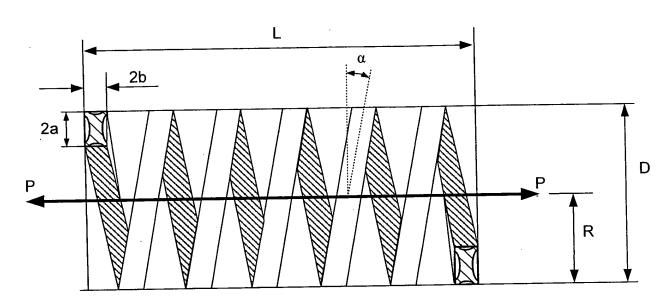


FIĞ. 31

BY PTO-948 (DRAFTSPERSON'S REVIEW DATED 06/16/05)

DESIGN OF FERROMAGNETIC SHAPE MEMORY ALLOY COMPOSITES AND ACTUATORS INCORPORATING SUCH MATERIALS

itle:



- D: THE DIAMETER OF THE SPRING (D=2R)
- d: THE DIAMETER OF THE WIRE
- p: THE PITCH OF ONE CYCLE
- n: THE NUMBER OF TURNS
- L: THE LENGTH OF THE SPRING W/O A LOAD (L=np)
- α: THE INCLINED ANGLE OF THE WIRE TO THE X-Y PLANE

FIG. 32

WARDERSON'S PEVIEW DATED 06/16/0

BY PTO-948 (DRAFTPERSON'S REVIEW DATED 06/16/0

Taya et al.

DESIGN OF FERROMAGNETIC SHAPE MEMORY ALLOY COMPOSITE

Title:

AND ACTUATORS INCORPORATING SUCH MATERIALS

Serial No: 10/790,634 Applicants: Minoru Taya et al. Attorney Docket No: UNIV0216

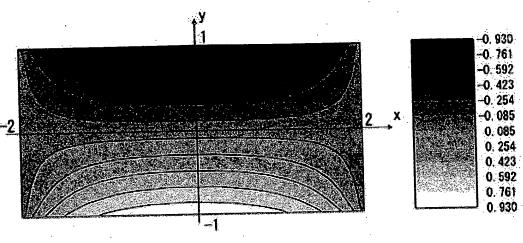
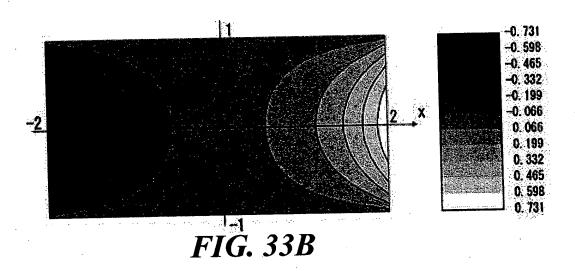


FIG. 33A



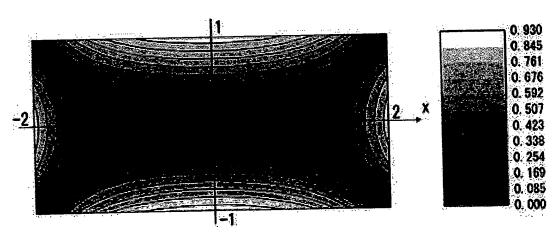


FIG. 33C

BY PTO-948 (DRAFTSPERSON'S REVIEW DATED 06/16/05)

DESIGN OF FERROMAGNETIC SHAPE MEMORY ALLOY COMPOSITES AND ACTUATORS INCORPORATING SUCH MATERIALS

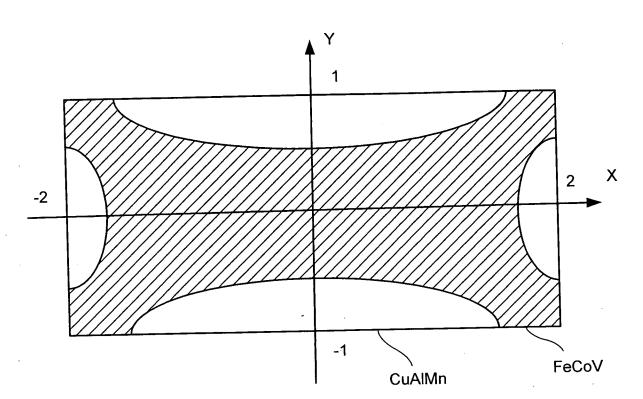


FIG. 34

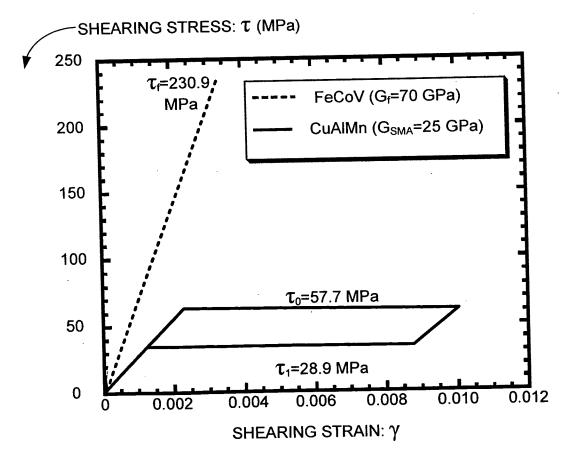


FIG. 35

Serial No: 10/790,634

Applicants: Minoru Tava et al.

DESIGN OF FERROMAGNETIC SHAPE MI

Applicants: Minoru Taya et al.

Attorney Docket No: UNIV0216

Title: DESIGN OF FERROMAGNETIC SHAPE MEMORY AL

AND ACTUATORS INCORPORATING SUCH:

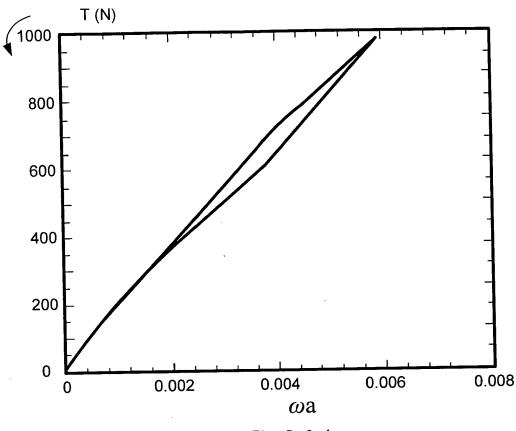
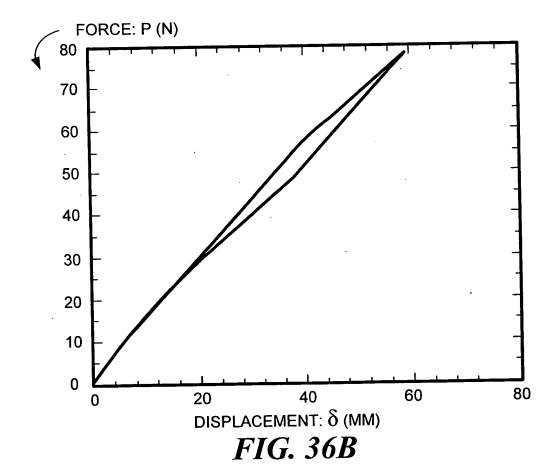


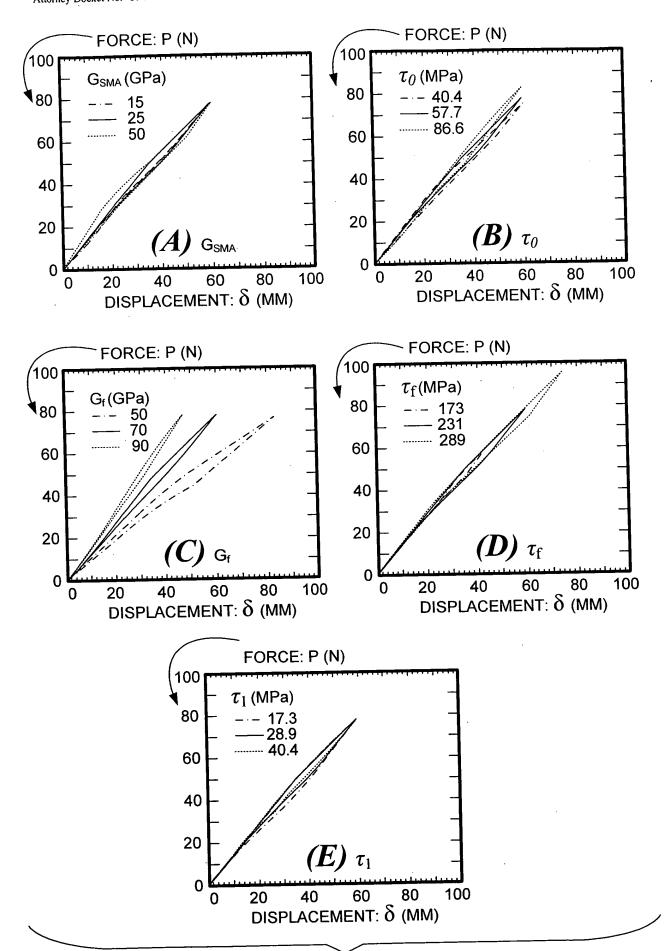
FIG. 36A



Title:

### BY PTO-948 (DRAFTSPERSON'S REVIEW DATED 06/16/05)

DESIGN OF FERROMAGNETIC SHAPE MEMORY ALLOY COMPOSITES AND ACTUATORS INCORPORATING SUCH MATERIALS



FIĞ. 37

### BY PTO-948 (DRAFTSPERSON'S REVIEW DATED 06/16/05)

GIGN OF FERROMAGNETIC SHAPE MEMORY ALLOY COMPOSITES
AND ACTUATORS INCORPORATING SUCH MATERIALS

1.414 1.414 x

Title:

FIG. 38

-1.414

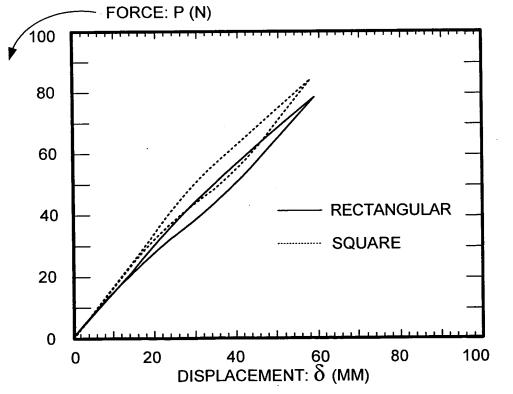
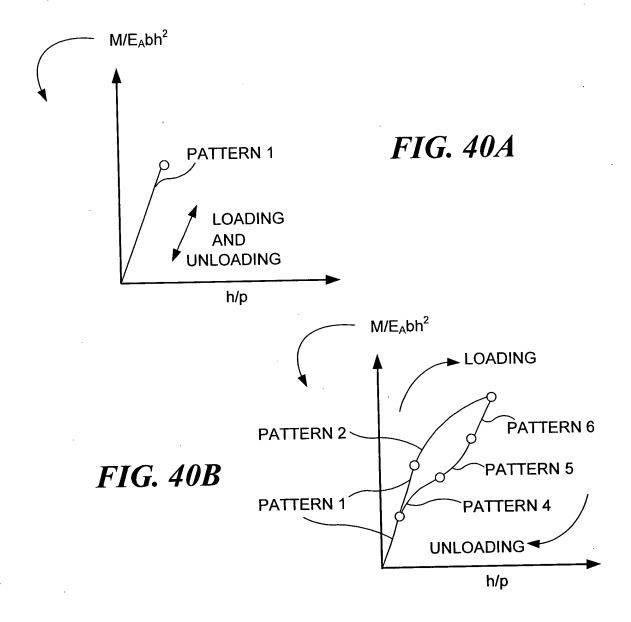
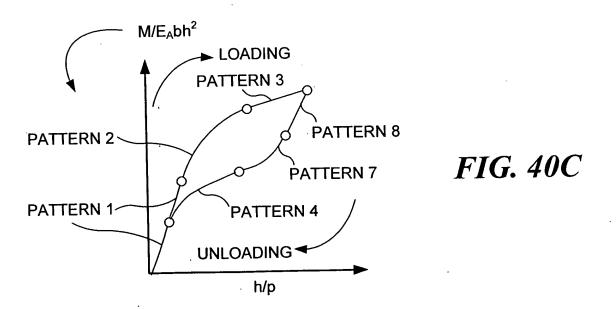


FIG. 39

DESIGN OF FERROMAGNETIC SHAPE MEMORY ALLOY COMPOSITES AND ACTUATORS INCORPORATING SUCH MATERIALS





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